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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,293	10/31/2003	Samuel J. Lewis	HES 2003-IP-011770U1	1381
28857	7590	07/15/2005	EXAMINER	
CRAIG W. RODDY HALLIBURTON ENERGY SERVICES P.O. BOX 1431 DUNCAN, OK 73536-0440			MARCANTONI, PAUL D	
			ART UNIT	PAPER NUMBER
			1755	

DATE MAILED: 07/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/698,293	Applicant(s) LEWIS ET AL.	
	Examiner Paul Marcantoni	Art Unit 1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/5/05 RCE.
 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-30 and 34-86 is/are pending in the application.
 4a) Of the above claim(s) 41-86 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1,5-30 and 34-40 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/29/05</u> . | 6) <input type="checkbox"/> Other: _____ |

35 USC 103:

Claims 1, 5-30, and 34-40 are rejected under 35 U.S.C. 103(a), as being unpatentable over Sugama '395, Gay et al. '295 B1, Neely Jr '661 B2, or Etherton (EP 1103533) alone or in view of Chatterji et al. (US 5,897,699 or US 6,063,738), Bour et al. (US 5,147,565), Cattanach (US Patent 3,615,784 or FR 1550231), Gopalkrishnan (US 5,252,128), DiLullo Arias et al. (US 6,235,809 B1),

Sugama teaches a composition for wells comprising cement, hydrolyzed protein (col.3, line17), and surfactant (see col.3 for foam stablizers in lines 20-25 and col.4, line 9) thus anticipating the instant invention. Even if not anticipated, overlapping ranges of amounts would have been prima facie obvious to one of ordinary skill in the art.

Gay et al. '295 B1 teach a method of mixing a cement (ie a method of cementing) by mixing a binder such as cement (col.6, line 9), hydrolyzed protein foaming agent (col.5, second paragraph), and surfactant. Note that POLYOX or polyethylene oxide is one example of a surfactant which is the foam stabilizer (col.5, lines 30-35).

Neely Jr '661 B2 teach mixing an alkali metal silicate cement, wetting agent such as surfactants including non-ionic, cationic, anionic, amphoteric, and zwitterionic (col.6, lines 40-50). Neely also teach the addition of hydrolyzed proteins (col.7 line 15) thus anticipating the instant invention. Even if not anticipated, overlapping ranges of amounts would have been prima facie obvious to one of ordinary skill in the art.

Etherton (EP 1103533 abstract) teach a process for cementing to make concrete by mixing cement with hydrolyzed protein and surfactant thus anticipating the instant

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invention. Even if not anticipated, overlapping ranges of amounts would have been prima facie obvious to one of ordinary skill in the art.

The primary references above do teach compositions comprising foaming agent surfactants and foam stabilizer surfactants. They all teach a hydrolyzed protein which is old and known in the art as a foaming agent. These references do not specifically teach the use of a betaine (e.g. cocobetaine) as a foam stabilizer. It is the examiner's position that Chatterji et al. (US 5,897,699 or US 6,063,738) and Bour et al. (US 5,147,565) teach that the use of a betaine as a foam stabilizer in a cement composition (such as well cements) is known and old in the art. It is the examiner's position that it would have been an obvious design choice for one of ordinary skill in the art to substitute another known foam stabilizer such as a betaine for the foam stabilizers of the primary references because they are both known and functionally equivalent.

Cattanach '784 and FR '231 have been cited as secondary references because it would have been an obvious design choice to use a specific hydrolyzed protein such as hydrolyzed casein as a foaming agent. An air entrainer or air entraining agent is a foaming agent and Cattanach teaches the use of air entrainers such as hydrolyzed casein for foaming in cement is known in the art. It would have been an obvious design choice to select a specific hydrolyzed protein such as hydrolyzed casein as a foaming agent in the primary references.

Gopalkrishnan '128 teaches it is old to add defoamers to cement compositions such as well cement compositions and even includes polypropylene glycol as a defoamer (col.6, line 54) which is the same defoamer as claimed by applicants (see

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applicatnts' claim 14). DiLullo Arias et al. teach the addition of a biocide into cements such as well cements is old and is a conventional additive whose addition to cement would have been an obvious design choice for one of ordinary skill in the art (col.3, line 50) and the use of a biocide the cement compositions of the primary references would thus have been obvious to one of ordinary skill in the art.

Obviousness Type Double Patenting:

Claims 1, 5-30, and 34-40 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 14 and 52 of U.S. Patent Nos. US 6,454,004 B2 (Reddy et al.) and US 6,793,730 B2 (Reddy et al.) alone or in view of Cattnach (US Patent 3,615,784 or FR 1550231).

Although the conflicting claims are not identical, they are not patentably distinct from each other because both teach a method of cementing by mixing hydrolyzed keratin with a betaine. A hydrolyzed keratin is a known hydrolyzed protein and it would have been an obvious design choice for one of ordinary skill in the art to use another known hydrolyzed protein such as hydrolyzed casein. Both hydrolyzed keratin and hydrolyzed casein are old in the art as foaming agent surfactants and the use of one or the other would have been an obvious design choice for one of ordinary skill in the art because both are hydrolyzed proteins and functionally equivalent as foaming agents for cement.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

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1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

35 USC 112 Second Paragraph:

Claims 1, 5-30, and 34-40 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention.

The terms "desired" location is indefinite in claim 1. It is equivalent to the indefinite term "predetermined".

The use of tradenames or trademarks is improper and indefinite in claims 14 and 15. The term "HLB" surfactant is indefinite. Applicants may write out what these abbreviations stand for in the claim to resolve this issue. The term "ENVIROGEM" is either a trademark and/or tradename and its use in patent claims is improper and indefinite.

The term "low density cement" is vague in claim 24. What cements are low density and what value of density is considered low?

References Cited of Interest:

Reddy (US 6,630,021) teaches in their claims a cement composition comprising hydrolyzed keratin and cocolyamidopropyl betaine but it was not used in the obviousness double patenting rejection above because a cement composition is claimed and not a method of cementing.

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Chao (US 5,110,839) has been cited because it teaches typical foaming agents are hydrolyzed proteins, as well as anionic, cationic, or non-ionic surfactants (col.4, lines 50-55).

Response to Remarks:

The applicants argue that the primary references do not teach a hydrolyzed protein in combination with a surfactant. In rebuttal, what the applicants are really claiming for their well cementing method (though well cementing is not claimed) is mixing not simply a surfactant and a co-surfactant but a foaming agent surfactant and foaming stabilizer surfactant. It is old in the art to use both in cement compositions including well cements and the primary references all teach hydrolyzed protein is old in the art as a foaming agent. Further, the primary references also teach the inclusion of additional surfactant such as a foam stabilizer. These references, however, do not teach a "betaine" foaming stabilizer surfactant. The secondary references show that the use of a betaine foaming stabilizer surfactant or another known foam stabilizer surfactant would have been an obvious design choice for one of ordinary skill in the art.

The applicants argue that Sugama teaches hydrolyzed proteins as a foaming agent. Yet, this is actually exactly what applicants are doing as well because their surfactant (hydrolyzed protein) and a co-surfactant when their ingredients are really just a foaming agent surfactant and foam stabilizer surfactant which are routinely used in cement compositions such as well cements.

The applicants argue Gay teaches a POLYOX (polyethylene oxide) foam stabilizer. Yet, a betaine is also a known foam stabilizer whether it is a surfactant or not.

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It would have been an obvious design choice for one of ordinary skill in the art to substitute one known foam stabilizer (POLYOX) for another known foam stabilizer (betaine).

The applicants argue that Neely allegedly is not a cement composition. The examiner disagrees and notes that alkali metal silicates are cementitious and are routinely used for this purpose. Applicants do not specify the specific cements of their invention in claim 1 so it still is inclusive of alkali metal silicate cements. The applicants argue that the Neely surfactant is used as a wetting agent. In rebuttal, the applicants actually make the examiner's point because it is notoriously known in the art that surfactants are wetting agents and improve dispersion. In fact a dispersant or dispersing agent is by definition a surface active agent (ie a surfactant). The applicants also argue that the intended use of hydrolyzed protein is as a humectant. While it may be a humectant, it also functions as a foaming agent because its usage as such is known and old in the art. It is expected that because Neely uses the same exact components in a cement compositions that their functions would expected to be the same.

The applicants argue that a "combination" of hydrolyzed protein and surfactant is different than a "blend" of hydrolyzed protein and surfactants. A blend is a combination and this argument is not convincing. Etherton meets the applicants' claim limitations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Marcantoni whose telephone number is 571-272-

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1373. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul Marcantoni
Primary Examiner
Art Unit 1755